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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,506	03/17/2004	Subramanian Bhaskaran	C-7230	8914
23631 7590 02/01/2007 JAMES J. MULLEN M. SUSAN SPIERING CELANESE LTD. IP LEGAL DEPT. , IZIP 701 P.O. BOX 428, HWY 77 S BISHOP, TX 78343			EXAMINER PUTTLITZ, KARL J	
			ART UNIT 1621	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/01/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/802,506

Applicant(s)

BHASKARAN ET AL.

Examiner

Karl J. Puttlitz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 12-20 and 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4-11 and 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.


### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
KARL PUTTLITZ  
PATENT EXAMINER

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of Group I, claims 1-11 in the reply filed on 11/20/2006 is acknowledged. The traversal is on the ground(s) that the restricted species are within the same field of search, and examination of the claims as filed would expedite prosecution without requiring an unreasonable amount of additional search time. This is not found persuasive because the searches for the Groups are not coextensive given the fact that the groups represent such disparate subject matter as a process and apparatus. This represents a clear burden on the PTO.

The requirement is still deemed proper and is therefore made FINAL.

The rejection under section 102/103 is maintained and repeated below.

Applicant's remarks in connection with this ground of rejection are also addressed.

### ***Claim Rejections - 35 USC § 102, 103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 remain rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over WO 2001/90042, as evidenced by counterpart U.S. Patent No. 6,790,983 to Zeyss et al. (Zeyss).

Zeyss teaches an integrated process for the production of vinyl acetate which comprises the steps:

(a) contacting in a first reaction zone a gaseous feedstock comprising essentially ethane with a molecular oxygen-containing gas in the presence of a catalyst to produce a first product stream comprising acetic acid and ethylene;

(b) contacting in a second reaction zone the first gaseous product stream with a molecular oxygen-containing gas in the presence of a catalyst to produce a second product stream comprising vinyl acetate;

(c) separating the product stream from step (b) and recovering vinyl acetate from said product stream from step (b). See column 2, lines 15-27.

The rejected claims cover a step of removing heat from at least a portion of the first product stream and providing at least a portion of the heat removed from the first product stream to, at least the acetic acid reaction stream. Zeyss fails to explicitly recite this step. However, as required by the claims, the acetic acid reaction stream is the same as the first product stream (see claim 1: "an acetic acid reaction stream comprised of at least a portion of the acetic acid from the first product stream").

Accordingly, any heat present in the first product stream is necessarily transferred to the acetic acid reaction stream, and is therefore an inherent part of the process of Zeyss.

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Accordingly, the rejected claims are anticipated by Zeyss for the reasons above, or, at least prima facie obvious since those of ordinary skill would expect that a portion of the heat in the product stream would be transferred to the acetic acid stream.

Applicant argues that claim 1 has been amended to further clarify that the heat added to the other parts of the process (i.e., the at least one of an acetic acid reaction stream and a purification section for the purification of vinyl acetate) is heat that is removed from the production of acetic acid and transferred into a heat transfer system. Applicants then argues that the claims thus differentiate between

- a) heat removed from the production of acetic acid and then transferred via a heat transfer system; and
- b) heat present in the acetic acid stream referenced by the examiner.

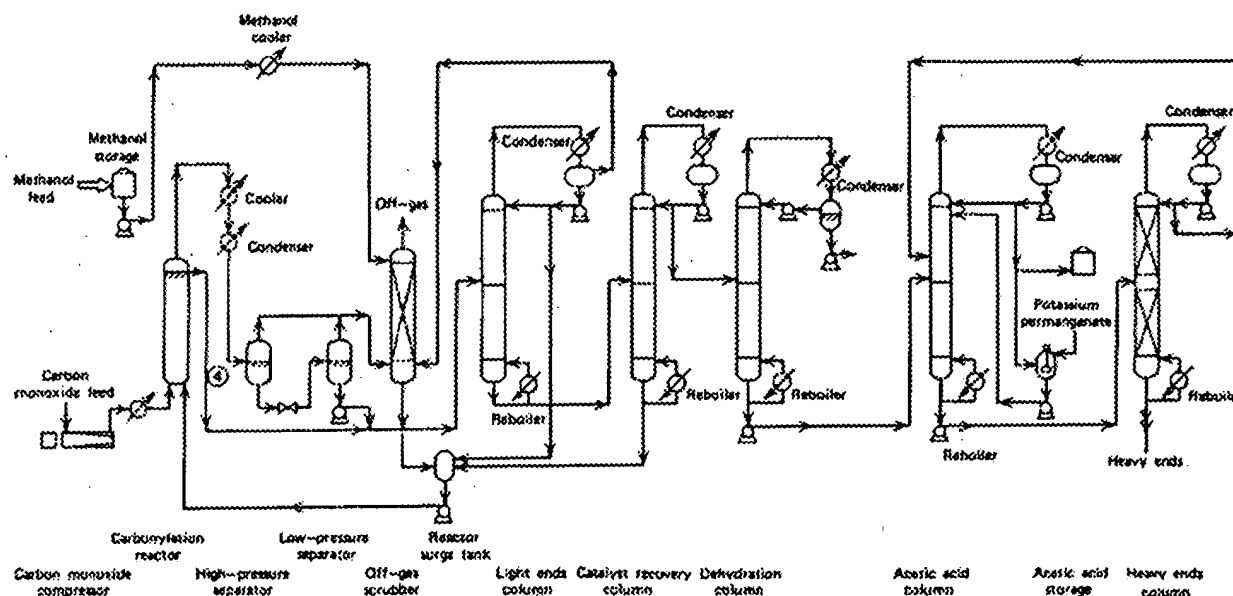
However, claim still reads on those embodiments wherein heat is removed from an acetic acid stream and is transferred back into this stream as it becomes an acetic acid reaction stream for conversion to vinyl acetate. In this regard, those of ordinary skill would expect that heat would be transferred between an acetic acid stream and walls of a connecting line, such as that connecting step and step b in Zeyss (see figure 1). In this view, the connecting line would be viewed as the heat transfer system, and thus anticipate the heat transfer system of claims 1 and 2, or alternatively, render this system prima facie obvious.

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Claim 3 remains rejected under section 103, below. Applicant's remarks in connection with this ground of rejection are also addressed.

Claims 3 remains rejected under 35 U.S.C. 103(a) as being unpatentable over Zeyss in view of *Kirk-Othmer Encyclopedia of Chemical Technology* Copyright © 2002 Article Online Posting Date: July 19, 2002 pp. 115-136 (Kirk Othmer).

Kirk Othmer teaches a carbonylation process for preparing acetic acid, including a steam condensate and flash distillation:



See pages 123-125.

Those of ordinary skill would have been motivated to modify the disclosure of Zeyss to include the carbonylation since Kirk Othmer teaches that these are common and efficient means for treatment of an acetic acid product stream, which would be

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appropriate for the integrated process on Zeyss. Therefore, the rejected claims are prima facie obvious in view of the combination of Zeyss and Kirk Othmer since the combination of these references teaches or suggest the elements of the rejected claims, with a reasonable expectation of success.

The examiner notes that neither Zyess nor Kirk Othmer teach or suggest a steam condensate stream (claim 4) or a pump-around condensation loop (claim 21) for transferring heat from the production of acetic acid to one of the acetic acid stream or a purification section for purifying vinyl acetate.

Claims 4-11 and 21 are objected to for dependence on one or more rejected claims, but would be allowable if rewritten in independent form, including all limitations of intervening claims.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl J. Puttlitz whose telephone number is (571) 272-0645. The examiner can normally be reached on Monday to Friday from 9 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman K. Page, can be reached at telephone number (571) 272-0602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



KARL PUTTLITZ  
PATENT EXAMINER